



SEQUENCE LISTING

<110> Sjoeholm, Carsten
Oestergaard, Peter Rahbek
Kluenter, Anne-Marie

<120> Use of Acid-Stable Subtilisin Proteases in Animal Feed

<130> NOVT 100

<140> 09/779,334

<141> 2001-02-08

<160> 7

<170> PatentIn version 3.1

<210> 1

<211> 27

<212> PRT

<213> Acremonium chrysogenum ATCC 48272

<400> 1

Ala Leu Val Thr Gln Asn Gly Ala Pro Trp Gly Leu Gly Thr Ile Ser
1 5 10 15

His Arg Gln Pro Gly Ser Thr Ser Tyr Ile Tyr
20 25

<210> 2

<211> 17

<212> PRT

<213> Bacillus alcalophilus NCIMB 10438

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Asn Gln Val Thr Pro Trp Gly Ile Thr Arg Val Gln Ala Pro Thr Ala
1 5 10 15

Trp

<211> 17
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 <213> Paecilomyces lilacinus CBS 102449

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Ala Tyr Thr Gln Gln Pro Gly Ala Pro Trp Gly Leu Gly Arg Ile Ser
 1 5 10 15

His

<210> 4
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 <212> PRT
 <213> Fusarium oxysporum IFO 4471

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Ala Leu Thr Thr Gln Ser Gly Ala Thr Trp Gly Leu Gly Thr Val Ser
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His Arg Ser Arg Gly Ser
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 <213> Bacillus sp. NCIMB 40484

<220>
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 <222> (1)..(27)
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 <222> (118)..(397)
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<222> (28) .. ()
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<400> 5

Met Lys Phe Lys Lys Ile Ala Ala Leu Ser Leu Ala Thr Ser Leu Ala
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Leu Phe Pro Ala Phe Gly Gly Ser Ser Leu Ala Lys Glu Ala Pro Lys
 -10 -5 -1 1 5

Pro Phe Gln Pro Ile Asn Lys Thr Leu Asp Lys Gly Ala Phe Glu Ser
 10 15 20

Gly Glu Val Ile Val Lys Phe Lys Asp Gly Val Ser Lys Lys Ala Gln
 25 30 35

Gly Ser Ala Leu Asn Lys Ala Glu Ala Asn Glu Gln Lys Ala Ser Ala
 40 45 50

Lys Asp Pro Phe Gln Val Leu Glu Val Ala Asp Val Asp Gln Ala Val
 55 60 65

Lys Ala Leu Glu Asn Asn Pro Asn Val Glu Tyr Ala Glu Pro Asn Tyr
 70 75 80 85

Thr Phe Gln Ala Thr Trp Ser Pro Asn Asp Pro Tyr Tyr Ser Ala Tyr
 90 95 100

Gln Tyr Gly Pro Gln Asn Thr Ser Thr Pro Ala Ala Trp Asp Val Thr
 105 110 115

Arg Gly Ser Ser Thr Gln Thr Val Ala Val Leu Asp Ser Gly Val Asp
 120 125 130

Ile	Asp	Arg	Asp	Asn	Asn	Pro	Met	Asp	Leu	Asn	Gly	His	Gly	Thr	His
150					155					160					165

Val	Ala	Gly	Thr	Val	Ala	Ala	Asp	Thr	Asn	Asn	Gly	Ile	Gly	Val	Ala
				170					175					180	

Gly	Met	Ala	Pro	Asp	Thr	Lys	Ile	Leu	Ala	Val	Arg	Val	Leu	Asp	Ala
			185					190					195		

Asn	Gly	Ser	Gly	Ser	Leu	Asp	Ser	Ile	Ala	Ser	Gly	Ile	Arg	Tyr	Ala
	200						205					210			

Ala	Asp	Gln	Gly	Ala	Lys	Val	Leu	Asn	Leu	Ser	Leu	Gly	Cys	Glu	Cys
	215					220					225				

Asn	Ser	Thr	Thr	Leu	Lys	Ser	Ala	Val	Asp	Tyr	Ala	Trp	Asn	Lys	Gly
230					235					240					245

Ala	Val	Val	Val	Ala	Ala	Ala	Gly	Asn	Asp	Asn	Val	Ser	Arg	Thr	Phe
				250					255					260	

Gln	Pro	Ala	Ser	Tyr	Pro	Asn	Ala	Ile	Ala	Val	Gly	Ala	Ile	Asp	Ser
			265					270					275		

Asn	Asp	Arg	Lys	Ala	Ser	Phe	Ser	Asn	Tyr	Gly	Thr	Trp	Val	Asp	Val
		280					285					290			

Thr	Ala	Pro	Gly	Val	Asn	Ile	Ala	Ser	Thr	Val	Pro	Asn	Asn	Gly	Tyr
	295					300					305				

Ser	Tyr	Met	Ser	Gly	Thr	Ser	Met	Ala	Ser	Pro	His	Val	Ala	Gly	Leu
310					315					320					325

Ala Ile Glu Gln Thr Ala Asp Lys Ile Ser Gly Thr Gly Thr Asn Phe
 345 350 355

Lys Tyr Gly Lys Ile Asn Ser Asn Lys Ala Val Arg Tyr
 360 365 370

<210> 6
 <211> 367
 <212> PRT
 <213> Paecilomyces lilacinus CBS 143.75

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 <222> (70)..(367)
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<220>
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 <222> (84)..(367)
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<400> 6

Ala Arg Ala Pro Leu Leu Thr Pro Arg Gly Ala Ser Ser Ser Ser Thr
 1 5 10 15

Ala Ser Thr Leu Ser Ser Ser Arg Thr Ala Cys Pro Ser Pro Leu Ser
 20 25 30

Thr Arg Leu Ser Ala Leu Cys Ile Arg Arg Pro Thr Ala Ser Thr Thr
 35 40 45

Thr Phe Ser Glu Ala Ser Arg Asn Leu Asn Ala Asn Asp Leu Lys Thr
 50 55 60

Thr Ile Asn Ala Tyr Thr Gln Gln Pro Gly Ala Pro Trp Gly Leu Gly
 85 90 95

Arg Ile Ser His Arg Ser Lys Gly Ser Thr Thr Tyr Glu Tyr Asp Thr
 100 105 110

Ser Gly Gly Ser Gly Thr Cys Ala Tyr Val Ile Asp Thr Gly Val Glu
 115 120 125

Ala Ser His Pro Glu Phe Glu Gly Arg Ala Ser Gln Ile Lys Ser Phe
 130 135 140

Ile Ser Gly Gln Asn Thr Asp Gly Asn Gly His Gly Thr His Cys Ala
 145 150 155 160

Gly Thr Ile Gly Ser Lys Thr Tyr Gly Val Ala Lys Lys Thr Lys Ile
 165 170 175

Tyr Gly Val Lys Val Leu Asp Asn Ser Gly Ser Gly Ser Tyr Ser Gly
 180 185 190

Ile Ile Ser Gly Met Asp Phe Ala Val Gln Asp Ser Lys Ser Arg Ser
 195 200 205

Cys Pro Lys Gly Val Val Ala Asn Met Ser Leu Gly Gly Gly Lys Ala
 210 215 220

Gln Ser Val Asn Asp Gly Ala Ala Ala Met Ile Arg Ala Gly Val Phe
 225 230 235 240

Leu Ala Val Ala Ala Gly Asn Asp Asn Ala Asn Ala Ala Asn Tyr Ser
 245 250 255

His Val Ala Gly Thr Ile Ala Ala Leu Asn Asn Ser Ile Gly Val Val
 65 70 75 80

Gly Val Ala Pro Asn Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala
 85 90 95

Asn Gly Ser Gly Ser Val Ser Ser Ile Ala Gln Gly Leu Gln Trp Thr
 100 105 110

Ala Gln Asn Asn Ile His Val Ala Asn Leu Ser Leu Gly Ser Pro Val
 115 120 125

Gly Ser Gln Thr Leu Glu Leu Ala Val Asn Gln Ala Thr Asn Ala Gly
 130 135 140

Val Leu Val Val Ala Ala Thr Gly Asn Asn Gly Ser Gly Thr Val Ser
 145 150 155 160

Tyr Pro Ala Arg Tyr Ala Asn Ala Leu Ala Val Gly Ala Thr Asp Gln
 165 170 175

Asn Asn Asn Arg Ala Ser Phe Ser Gln Tyr Gly Thr Gly Leu Asn Ile
 180 185 190

Val Ala Pro Gly Val Gly Ile Gln Ser Thr Tyr Pro Gly Asn Arg Tyr
 195 200 205

Ala Ser Leu Ser Gly Thr Ser Met Ala Thr Pro His Val Ala Gly Val
 210 215 220

Ala Ala Leu Val Lys Gln Lys Asn Pro Ser Trp Ser Asn Thr Gln Ile
 225 230 235 240

Arg Gly His Thr Thr Gly Thr Thr Thr Thr Thr Thr Thr Thr Thr Thr

Phe Gly Ser Gly Leu Val Asn Ala Glu Ala Ala Thr Arg
260 265